

OWNERS INSTRUCTION MANUAL

IMPORTANT

**Before riding, see
inside front cover for
quick assembly
instructions to ensure
your safety.**



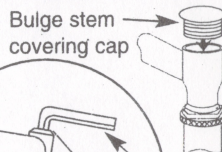


IMPORTANT ASSEMBLY GUIDE

To ensure your bike is fit for the road, please follow the instructions below

Tools Required
2x10, 13, 14 and
15mm Spanners
6mm Allen Key

**DO NOT RAISE THE
HANDLEBAR STEM
PAST THE MAXIMUM
EXTENSION POINT
CLEARLY MARKED ON THE
STEM - IT WILL BE UNSAFE**



1 To position handlebars

Insert stem into frame. Align and tighten Bolt A. Slacken Bolt B to rotate handlebar to preferred position and tighten with 6mm Allen Key, after securing firmly press plastic covering cap into stem top (Bulge stem only)

2 To adjust brakes

Adjustment is affected by turning the lever mounted adjusters marked C, after having fitted cable as instructed in service manual.

3 To fit Pedals

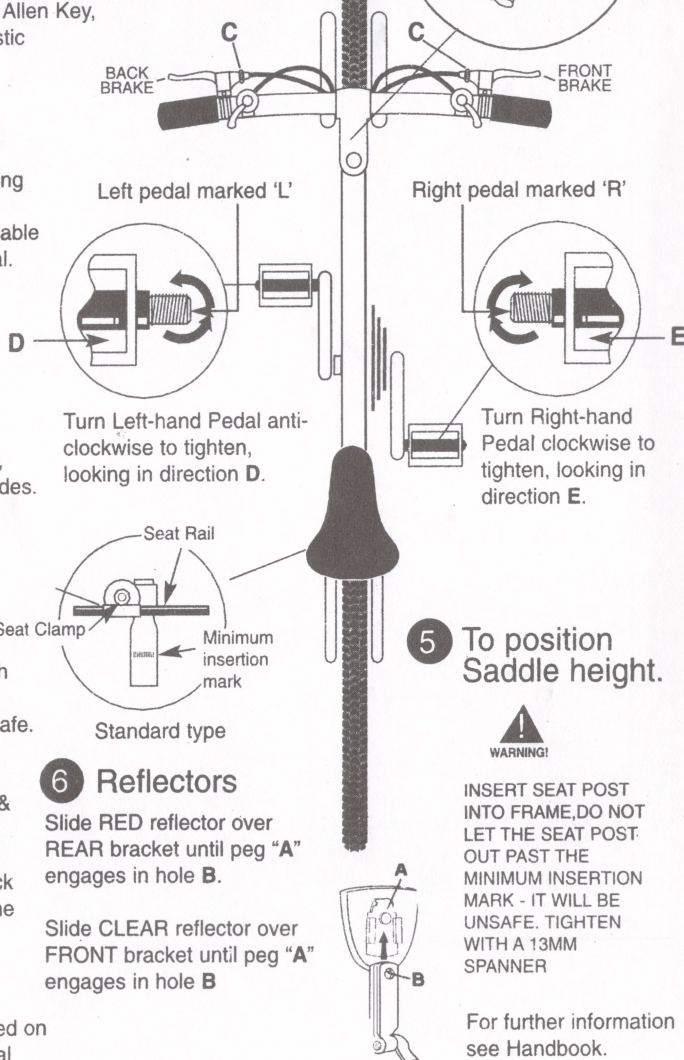
Note that pedals have right & left hand threads
Using a good 15mm spanner make sure both pedals are screwed as tightly as possible, re-tighten pedals after a few rides.

7 Remember

- 1 Check and re-tighten all bolts after the first few weeks of cycling.
- 2 Your bike is a machine which you take on the road. Please keep it in good order and be safe.
- 3 Always oil all moving parts sparingly, but regularly, particularly - Chain and Front & Rear Gear mechanisms.
- 4 Do not ride with your tyres under inflated or you may crack the tyre wall and/or damage the wheel rim.

4 Tyres

Inflate to pressure as instructed on side wall of tyre, with a manual inflator. DO NOT use compressed air from a Filling Station.



6 Reflectors

Slide RED reflector over REAR bracket until peg "A" engages in hole B.

Slide CLEAR reflector over FRONT bracket until peg "A" engages in hole B

5 To position Saddle height.



INSERT SEAT POST INTO FRAME, DO NOT LET THE SEAT POST OUT PAST THE MINIMUM INSERTION MARK - IT WILL BE UNSAFE. TIGHTEN WITH A 13MM SPANNER

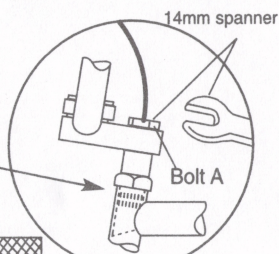
For further information see Handbook.

IMPORTANT ASSEMBLY GUIDE - FREESTYLE BMX

To ensure your bike is fit for the road, please follow the instructions below

Tools Required:
13 & 14mm Spanners
6mm Allen Key
15mm Socket Spanner
250mm long 'Tommy Bar'

DO NOT RAISE THE HANDLEBAR STEM PAST THE MINIMUM INSERTION POINT CLEARLY MARKED ON THE STEM - IT WILL BE UNSAFE

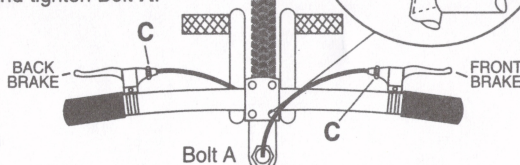


1 To position handlebars

Turn the bar through 90°. Align and tighten Bolt A.

2 To adjust brakes

Adjustment is affected by turning the lever mounted adjusters marked C.



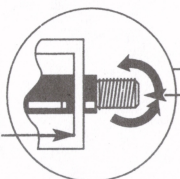
3 To fit Pedals

Note that pedals have right & left hand threads

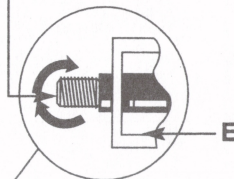
Using a good 15mm spanner make sure both pedals are screwed as tightly as possible, re-tighten pedals after a few rides.

Left pedal marked 'L'

Right pedal marked 'R'



Turn Left-hand Pedal anti-clockwise to tighten, looking in direction D.



Turn Right-hand Pedal clockwise to tighten, looking in direction E.

6 Remember

- 1 Check and re-tighten all bolts after the first few weeks of cycling.
- 2 Your bike is a machine which you take on the road. Please keep it in good order and be safe.
- 3 Always oil all moving parts sparingly, but regularly, particularly the Chain.
- 4 Do not ride with your tyres under inflated or you may crack the tyre wall and/or damage the wheel rim.

7 Axle Pegs

Screw peg on by hand, then tighten using BOTH hands on 'Tommy Bar'.

4 Tyres

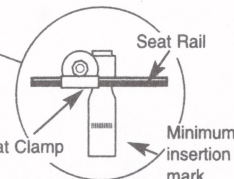
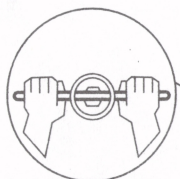
Inflate to pressure as instructed on side wall of tyre, with a manual inflater. DO NOT use compressed air.

5 To position Saddle height.

DO NOT LET THE SEAT POST OUT PAST THE MINIMUM INSERTION MARK - IT WILL BE UNSAFE.



For further information see Handbook.



Standard type

For BMX Assembly especially the handlebar plate sequence of tightening- refer to p14

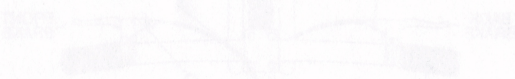
To ensure your unit is fit for the road, please follow the inspection checklist.

DO NOT RAISE THE
FAN BELT TENSION
PART THE BELT
AND TIGHTEN POINT
CAREFULLY. RAISING ON THE
TENSION IT WILL BE DAMAGED.



1. To position the handbrake

The handbrake is located at the front of the unit.



2. To adjust the brakes

The brake adjustment is located at the rear of the unit. The brake adjustment is located at the rear of the unit.

Right brake adjustment B

Left brake adjustment C



3. To fit the pedals

The pedals are located at the rear of the unit.

Turn the adjustment
screw clockwise
to adjust the
brake tension.

Turn the adjustment
screw clockwise
to adjust the
brake tension.



4. To check the oil level

The oil level is checked at the rear of the unit.

Stand on level

Stand on level

5. To check the oil level

5. To check the oil level

6. To check the oil level

6. To check the oil level

7. To check the oil level

7. To check the oil level

8. To check the oil level

8. To check the oil level

9. To check the oil level

9. To check the oil level

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Safety



Maintenance



Technical

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About This Manual

This instruction manual has been produced in a manner that will enable you to obtain maximum pleasure from riding your bicycle, in a safe and comfortable way. The manual advises on safety tips, explains technical points, and gives clear instructions for the maintenance and adjustment of the various parts and systems. The rapid advances in bicycle technology are sophisticated, but these advances are designed in a user friendly manner, simplifying adjustment and maintenance. It is highly probable that since your last bicycle purchase, changes will have been introduced in the various control systems and will be new to you, so **it is strongly recommended that time is taken to read through this manual in order to minimise problems on your first excursions.**

Keep this manual in a safe place and be sure to complete the back page with frame number details, date of purchase and the name of your supplier.

Safety

Your bicycle has been designed to comply with the requirements of British Standard 6102 part 1. The standard covers all points of safety for bicycles designed for use as a leisure mode of transport on road and cycle track. For your bicycle to continue to comply with this safety standard, it is essential that it is regularly lubricated, maintained and adjusted. The bicycle has **not** been designed for competition, stunt or trick riding in any way, neither does the standard cover such use. It must be repeated that using the bicycle in such a manner will invalidate the manufacturers guarantee.



Bicycle Safety Tips

A thorough weekly check on the following points is essential, and in addition the points should be checked prior to each time the bicycle is used.



- (1) Wheels are secured in the forks and rear drop-outs.
- (2) Wheels are true with the hubs correctly adjusted free from side play.
- (3) Both brakes operate correctly.
- (4) Steering is free with no excess play (when pushed forward and back with the front brake applied).
- (5) Tyres are in good condition, and inflated to the pressure shown on the tyre wall.
- (6) Gears are correctly adjusted.
- (7) Pedals and pedal cranks are securely tightened.
- (8) All nuts and bolts are tight (Torque settings, a measure of tightness, are given in the manual. Your dealer will give you practical advice on these settings).
- (9) Your riding position is comfortable.
- (10) Practice braking, gently at first, then more fiercely in order to understand the braking systems capabilities.

It is your responsibility to ensure that the bicycle is in a safe working condition before riding.

Safe Riding Tips

- (1) Always wear a protective cycling helmet.
- (2) Always select a gear which enables you to pedal at about seventy revolutions a minute (similar to your resting heart beat). This will give you better control of your bicycle and make it easier to accelerate as you cycle along. Remember, with the correct use of the gearing system, cycling is five times more efficient than walking!
- (3) Familiarise yourself with, and observe the cycling regulations and advice given in the Highway Code.
- (4) Make sure that none of your clothing can be caught in the wheels or chain drive.
- (5) Always ride defensively, be on your guard, and continually be expecting problems and hazards to occur.
- (6) Obey all traffic regulations and local bylaws and rules.
- (7) Use cycle lanes whenever possible.
- (8) Regularly glance over your shoulder to observe traffic approaching you from the rear, and always do so before giving a hand signal.
- (9) Give other road users clear hand signals in good time, to advise them of your intended action.
- (10) Be alert to cars pulling out into your path, and doors on parked cars being opened in your path.
- (11) Observe the road surface ahead avoiding potholes and drains.
- (12) Never carry a passenger.
- (13) Never hold onto a moving vehicle, or a stationary vehicle when stopped in traffic.
- (14) Always ride in single file.
- (15) Don't ride too close to another vehicle (bikes included).
- (16) Never hang bags or clothing on the handlebars. They will affect your steering.



Riding Conditions

Extra caution is required when riding in wet or icy conditions. Your braking performance will be affected by the water on the brake surfaces and between the tyres and road surface. Stopping distances may well be doubled or even trebled, so a greater anticipation of stopping or slowing is required.



Minimise the time spent cycling in the dark, should you have the need to do so the law requires that your bicycle is fitted with the front and rear reflectors and two wheel reflectors supplied, and in addition front and rear lights which comply with BS6102 part 2.

It is recommended that light coloured, preferably reflective garments are worn when riding in the dark.

Maintenance

As the bicycle is sometimes thought of as "just a bike", its maintenance is often forgotten or entrusted to a young child by its parents without a second thought. However, to keep a cycle properly maintained requires some time and skill. The effort will be worthwhile, as a well looked after cycle will last longer and be easier to ride. Cycle maintenance often entails jobs that require specialised skills and equipment, and for this reason we recommend your cycle is fully serviced by your Cycle Dealer at least once a year or more often if subjected to heavy use.



Regular Cleaning

To keep your cycle running smoothly, all moving parts must be free from dirt. Use warm soapy water on alloy, chrome and enamel parts. Always rinse with clean water and dry with a cloth, and then wipe chrome with a lightly oiled cloth. Keep the chain, derailleurs and rear sprockets clean by wiping down regularly with a rag. You may find an old stiff toothbrush useful to remove stubborn grit and grime.



Lubrication

Keep your cycle in good condition by oiling and greasing regularly. As the greasing of bearing requires dis-assembly and the use of special tools, we recommend that you leave this task to your Dealer. Have all bearings greased once a year.

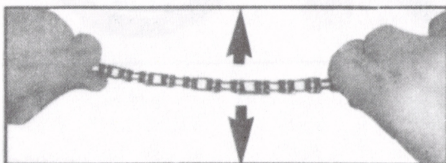


Note: Avoid vegetable based oils and over lubricating, as this will collect dirt and grit.

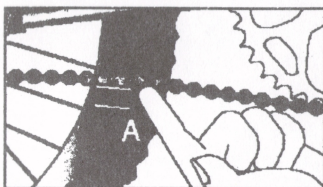
Warning: Keep all oil and grease off the rims, brake blocks and tyres.

Chain Adjustment

Always keep your chain well lubricated. If your chain does not run smoothly, it may be due to a stiff link. If this is so, identify the link and flex the chain back and forth to loosen the link.



SINGLE SPEED CHAIN TENSIONING



Dimension A + 6-12mm

Check the chain tension once a month. When grasped in the middle of the chain run between the chainwheel and freewheel, there should be from 6mm to 12mm vertical movement. To adjust tension slacken wheelnuts, pull back wheel, then retighten nuts to recommended torque checking that the wheel is central between the chainstays.

Cycle Security

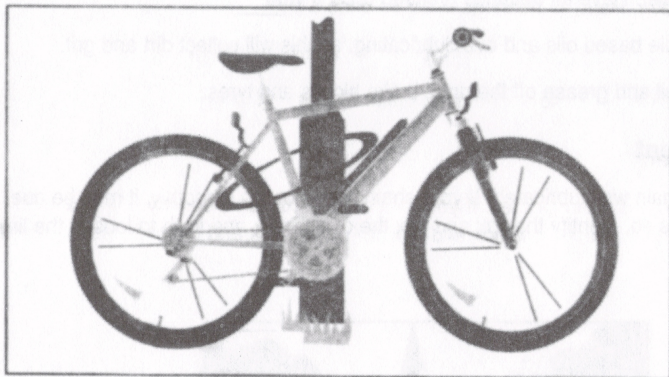
Beware! Your bicycle may be stolen if ever left unattended and unsecured.

Each year thousands of bicycles are stolen and most are never recovered, and insurance cover may well be invalid if your cycle is not securely locked.

Always use a heavy duty chain or purpose made lock, and wherever possible secure your bicycle to a post or fixed object. Thread your chain through as many parts of the bicycle as possible and before leaving it, remove all removable parts. Your cycle dealer will be able to offer a wide range of locks and clamps.

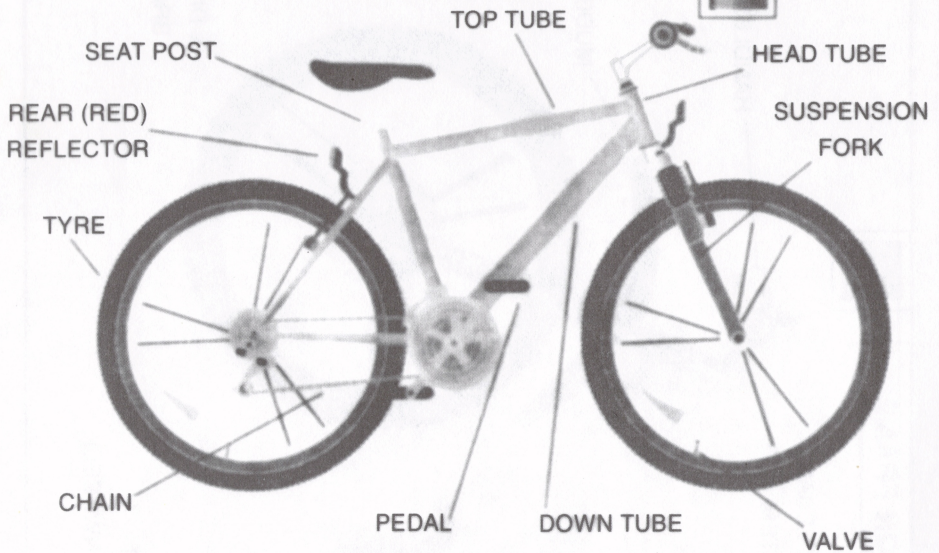
Every cycle has its own individual Frame Number. Your dealer will indicate where this can be found.

It is also recommended that you have your bicycle marked with your home Post-code. Ask your Dealer or local police station for details. If stolen the code will assist the police in returning your bicycle should they recover it, and in addition will assist the police by giving them possible leads in the movements of stolen cycles.

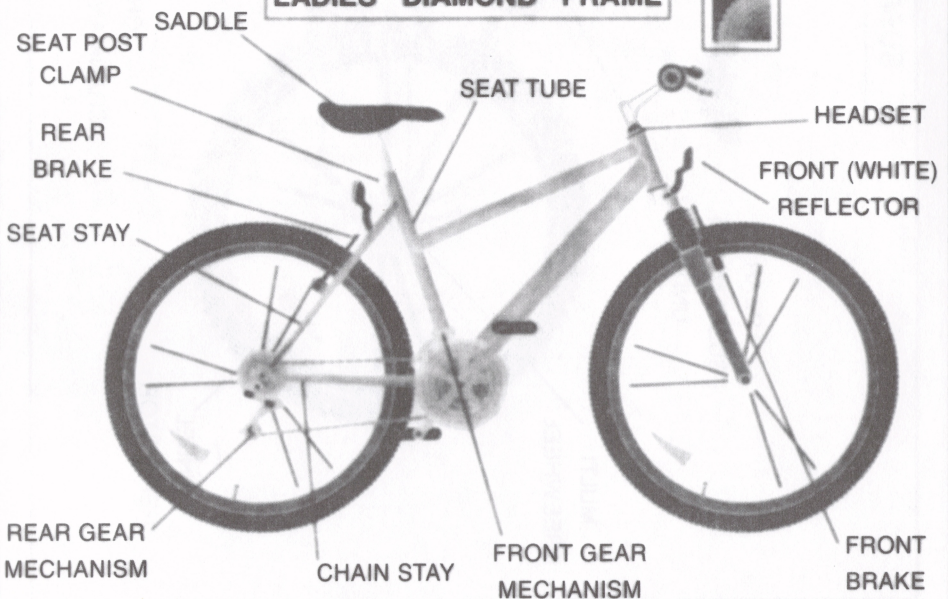


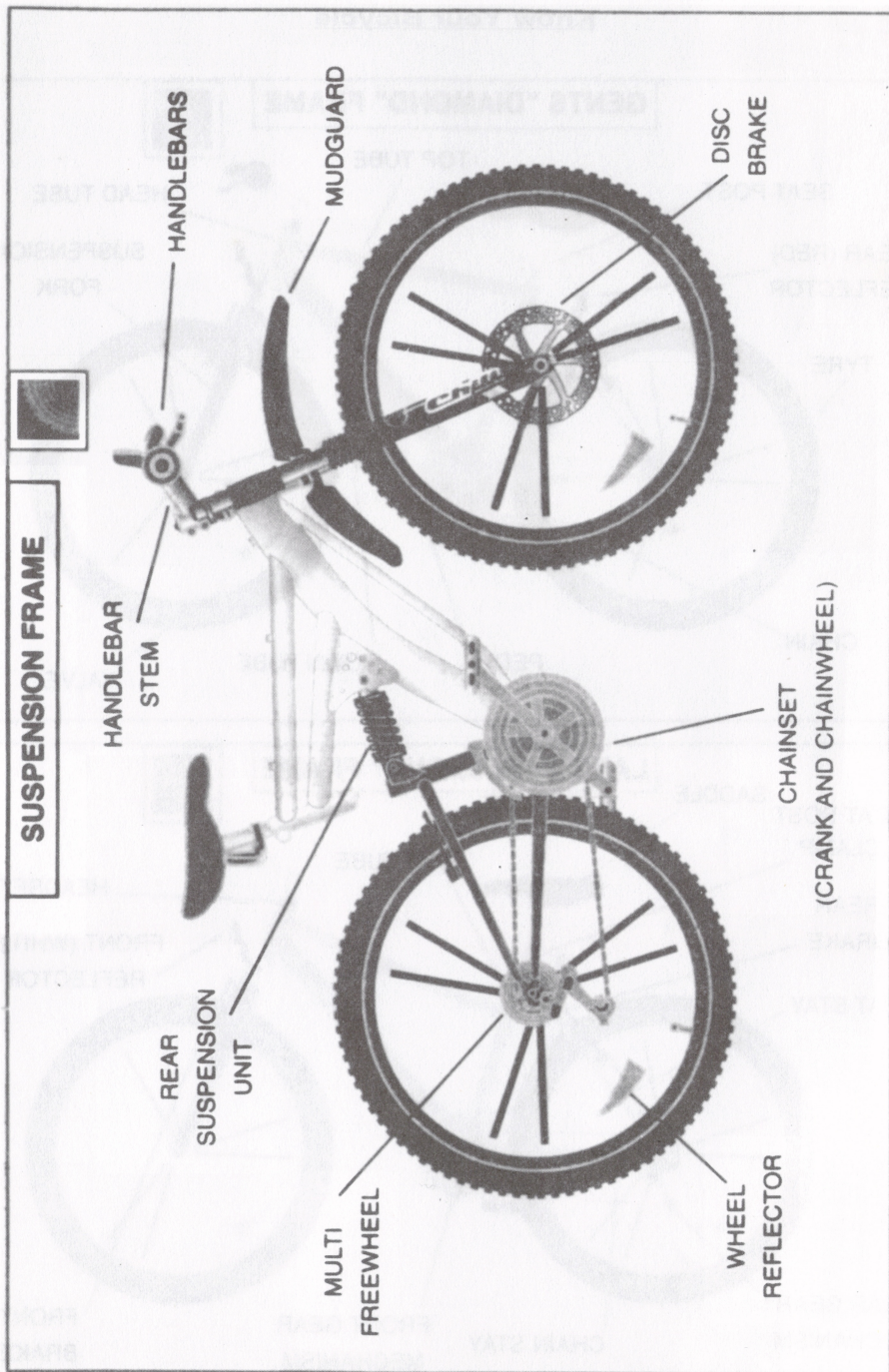
Know Your Bicycle

GENTS "DIAMOND" FRAME

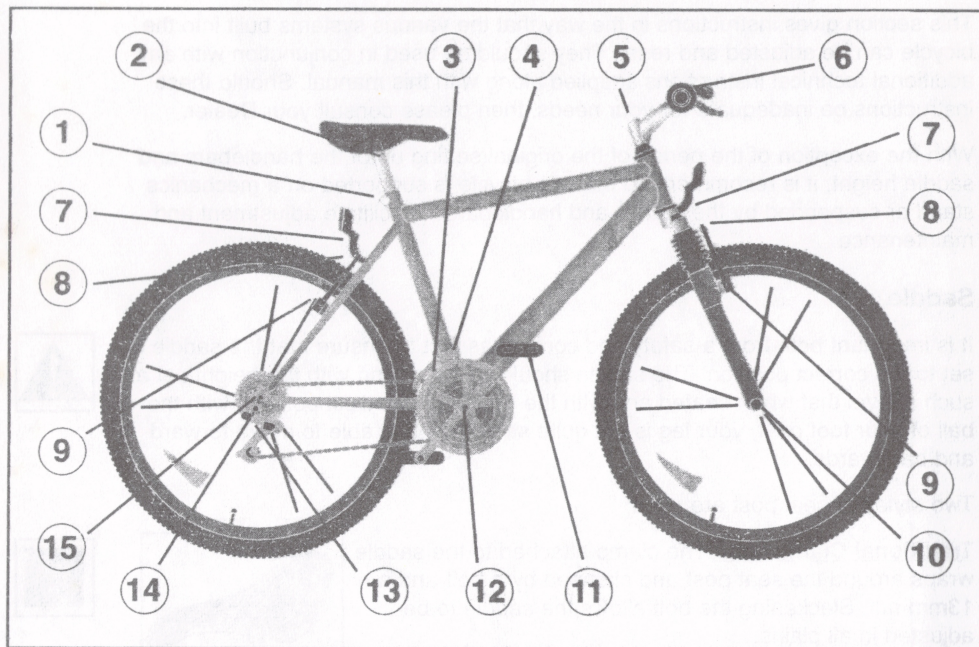


LADIES "DIAMOND" FRAME





Recommended Torque Measurements



DESCRIPTION		TORQUE
1	Seat Pin (Domed Nut)	17 Nm
2	Saddle Clamp Bolt	20 Nm
3	Front Derailleur Cable Fixing Bolt	5 - 7 Nm
4	Front Derailleur Clamp Bolt	5 - 7 Nm
5	Stem Expander Bolt	20 Nm
6	Stem Binder Bolt	25 Nm
7	Front & Rear Reflector Mounting Bracket	3 Nm
8	Front & Rear Brake Cable Fixing Bolt	6 - 8 Nm
9	Front & Rear Brake Fixing Bolt	5 - 7 Nm
10	Front Axle Nut/QR Axle	30 Nm/5 Nm
11	Pedal	40 Nm
12	Front Chainwheel Fixing Bolt	35 - 50 Nm
13	Rear Derailleur Cable Fixing Bolt	5 - 7 Nm
14	Rear Derailleur Fixing Bolt	8 - 10 Nm
15	Rear Axle Nut/QR Axle	30 Nm/5 Nm

Basic Adjustments

This section gives instructions in the way that the various systems built into the bicycle can be adjusted and reset. They should be used in conjunction with any additional technical instructions supplied along with this manual. Should these instructions be inadequate for your needs, then please consult your Dealer.

With the exception of the period of the original setting up of the handlebars and saddle height, it is recommended that the bicycle is supported on a mechanics stand or suspended by the saddle and handlebars to facilitate adjustment and maintenance.

Saddle

It is important both from a safety and comfort aspect to ensure that the saddle is set to the correct position. The saddle should be level, and with the height set at such a level that when seated and with the pedal at its lowest position with the ball of your foot on it, your leg is not quite straight and is able to move forward and backwards.



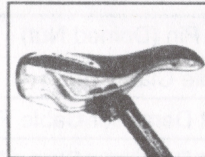
Two styles of seat post are used:

Traditional Clamp Type The clamp attached to the saddle wraps around the seat post and clamped by a bolt and a 13mm nut. Slackening the bolt allows the saddle to be adjusted in all plains.

Re-tighten when the required position is established.

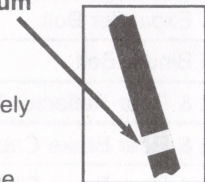


Micro Adjust The seat post holds the saddle by the frame using a 6mm Allen bolt. This type allows a more accurate level position to be obtained and is a neater design than the traditional type. Adjustment is achieved by slackening the 6mm Allen bolt swinging the saddle to the correct position, then re-tighten the clamping bolt.



The seat must not be raised above the level of the “**Minimum Insertion**” mark, which is marked on the seat post.

The “**Minimum Insertion**” mark must not be visible. It identifies the highest level to which the saddle can be safely raised.



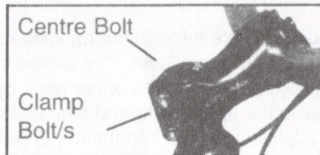
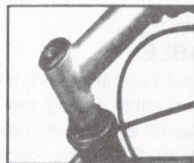
A slight alteration to your reach is possible by slackening the saddle clamp, and sliding the saddle to a more suitable position.

Handlebar Assembly (Handlebars and Stem)

Two styles of handlebar stems are used:

Standard Held in place with a centre bolt, and **whose height can be adjusted** up to the level of the "**Minimum Insertion**" mark on the vertical tube of the stem. Its only function is to secure the handlebars to the fork steerer tube.

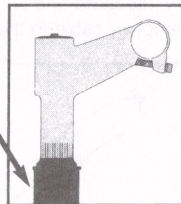
"A-Head" type **whose height cannot be adjusted**. It has a centre bolt and either one or two bolts on the side adjacent to the centre bolt. It is lighter by design than the standard type, and combines the functions of setting the headset (steering) bearing tightness, and clamping the handlebars to the forks.



Standard Assembly

To adjust the height or radial position of the handlebars, slacken off the bolt in the centre of the stem with an allen key. If necessary, tap the bolt gently and it will slide into the stem, slackening the assembly. The handlebar height can then be adjusted up to the "**Minimum Insertion**" mark on the stem.

The "**Minimum Insertion**" mark must never be visible. The mark indicates the highest safe position to which the stem may be raised. Re-tighten the stem, ensuring that the handlebars are set at 90° to the front wheel.



"A-Head" Type Assembly

On no account should an attempt be made to alter the height of this type of handlebar stem. Any attempt to raise the handlebars will loosen the steering bearings and render the cycle unsafe.

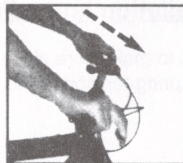
To adjust the radial position of the handlebars, slacken off the one/two bolts on the side of the stem, adjust the position then re-tighten.



Handlebar Position

As a general guide, the top surface of the brake levers should follow the line from your shoulder to your hand.

With either system, in order to rotate the handlebars to obtain a more comfortable riding position, slacken off the one/two bolts which clamp the handlebars to the stem, and re-position. Re-tighten the clamping bolts ensuring that with the two bolt clamp, the two bolts are tightened equally.



Rotor Cable Installation and Adjustment

Refer to Illustration.

UPPER CABLE:

1. First connect the barrel end of the cable 3 to the rear brake lever. Make sure the long cable casing is on top of the short cable casing; the upper cable will have a twist in it.

NOTE: The barrel end is the end of the upper cable that connects to the brake lever. The axis on the barrel end on the SST upper cable is precisely aligned with split cables. If the barrel end is installed 180 degrees (half turn) out of position, the upper cable will have a twist that could decrease the cables life and performance.

2. Route the upper cable through the handlebars (below the crossbar) with the short cable casing on the same side as the rear brake lever. This allows the upper cable to be shorter and less intrusive.

3. Connect the upper cable to the upper plate by passing the football ends of the upper cable through the threaded holes in the upper plate and connecting them to the Oryg bearing.

4. Screw the adjusting barrels into the upper plate. Don't tighten the locknuts at this time.

LOWER CABLE:

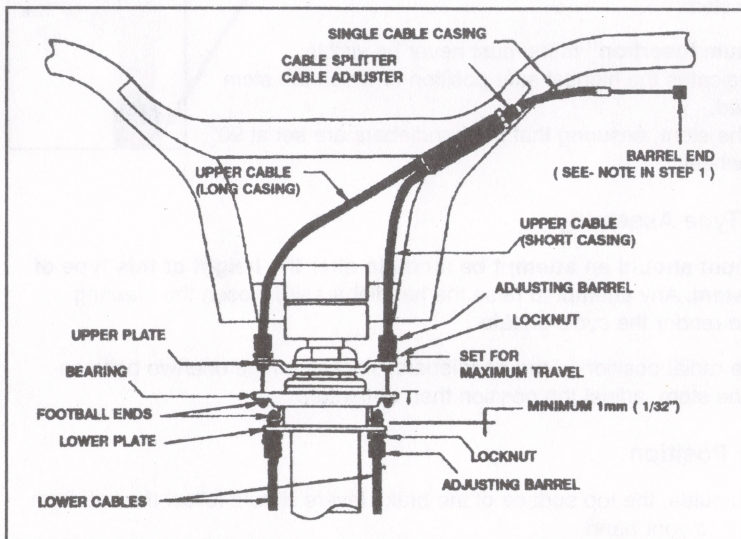
1. Slide the single cable casing through the cable guide on the frame.

2. Connect the lower cable to the lower plate by passing the football ends of the lower cable through the threaded holes in the lower plate and connecting them to the Oryg bearing.

3. Screw the adjusting barrels into the lower plate. Don't tighten the locknuts at this time.

4. If necessary, measure and cut the single cable casing to the correct length of your bike.

5. Connect the lower cable to the rear brake. Don't adjust the rear brake at this time.



Cable installation and adjustment should only be done by a qualified mechanic

NOTE: Check to make sure all 11 cable casing ends on the upper and lower cables are seated correctly, and that the spring tension of the rear brake is pulling the Oryg bearing down.

ADJUSTMENT:

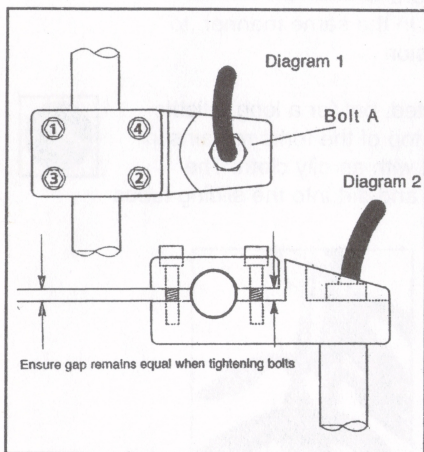
1. Screw the cable adjuster on the brake lever and the cable adjuster located in the cable splitter of the upper cable all the way in.
 2. Set the bearing position for the maximum travel with the adjusting barrels in the upper plate. Screw them in (or out) until the bearing is as far down as it can go without resting on the lower plate or the adjusting barrels screwed into the lower plate.
 3. Use the adjusting barrels that are screwed into the upper plate to make the bearing parallel to the upper plate. Use a wrench to tighten the locknut on the left adjusting barrel of the upper cable. Leave the right one loose.
 4. Screw the adjusting barrels on the lower cable into (or out of) the lower plate until they are close to the bearing as they can get without touching the bearing.
 5. Screw the cable adjuster located on the cable's splitter of the upper cable out until all the slack is removed from the upper cable. Now screw the adjusting barrel out one more turn to raise the bearing and additional 1mm (1/32") away from the lower plate.
- CAUTION: Don't screw the cable adjuster located on the cable splitter of the upper cable out more than 8mm. If more adjustment is needed, use the cable adjuster that is screwed into the rear brake lever.
6. Check that the bearing flops by placing the handlebars in the normal riding position, then quickly rotating the handlebars back and forth (about 1/8th turn) > Perform the following steps to eliminate bearing flop.

NOTE:

The Oryg bearing should never be allowed to rest on the lower plate or the adjusting barrels screwed into the lower plate.

- a) Screw the adjusting barrels on the lower cable out (or into) the lower plate until the bearing flop is eliminated (checking bearing flop as described in step 6).
 - b) Tighten the locknut on the left adjusting barrel on the lower cable.
 - c) Rotate the handlebars 180 degrees and recheck for bearing flop. If there is any bearing flop, use the loose adjusting barrels on the upper cables to remove it.
 - d) Repeat steps 6a and 6c until the handlebars can be rotated 360 degrees without any bearing flop.
 - e) Tighten the loose locknuts and recheck for bearing flop by rotating the handlebars 360 degrees.
7. Finish adjusting the rear brakes.

BMX Handlebar Assembly Instructions



1. Slacken bolt A, whilst supporting the handlebar stem to permit the stem to be turned to the correct forward pointing position without damaging the rear brake cables.
2. When in the correct forward pointing position, set the stem below the minimum insertion mark. Retighten bolt "A" firmly with the spanner supplied.
3. Slacken the four clamping bolts to permit the handlebars to be rotated upwards to the desired riding position.
4. The handlebars are secured onto the stem using four allen bolts. It is important that all four bolts are tightened by the same amount (diagram 1.) shows the stem and the four bolts looking from the top and indicate the order in which they should be tightened.
5. The bolts should be tightened one full turn at a time so that the gap between the top plate and the stem body is equal all the way around the stem (see diagram 2). The bolts should all be tightened securely using the allen key supplied to the tightening torque given in the manual.

Frame and Forks

The most obvious visual changes to bicycles over the last few years is in the frame and fork design. While the traditional rigid "Diamond" design is still popular it is now available with telescopic suspension forks. The forks may be standard mounting, that is with a single tube fitting through the head tube of the frame similar to rigid forks, or "Triple Mount". This type are based on motor cycle forks with the fork blades continuing through the fork crown to be secured at a second location at the top of the frame head-tube. This type has a greater compression range than the standard.



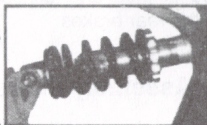
Alongside of this development has come the full suspension bike which generally uses a "Y" shaped frame on which is fitted suspension forks and a rear suspension unit. Another change has been the introduction of a rigid "Y" frame which basically uses a similar mainframe design as the full suspension bike.

Frame and Fork Adjustment

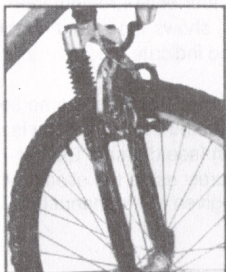
Frame The full suspension frame is fitted with a pivot which allows the rear end of the frame to move as the suspension unit is compressed under load. Checking the tightness of this pivot should be included in the regular checks on your bike, but any further maintenance should be carried out by your dealer.



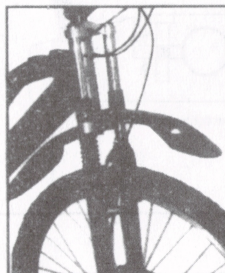
The rear shock absorber unit which is compressed under load, can be adjusted to accommodate riders of different body weights and also to give either a soft or hard ride. The total adjustment available on the unit is between 25-28mm. As a starting point the unit should be adjusted by turning the large knurled collar from a position when it does not apply any load on the spring, sufficient to compress the spring about 8mm. To give a harder ride, turn the collar to compress the spring further. In the same manner, to achieve a softer ride, slacken off the spring compression.



Forks Neither type of suspension forks can be adjusted, but for a long reliable life, ensure that the foam or bellow type gaiter at the top of the forks remains in good condition, with the chrome tube regularly wiped with an oily cloth. The purpose of the gaiter is to prevent the ingress of grip and dirt into the sliding tubes of the suspension units.



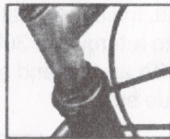
STANDARD
MOUNTING



TRIPLE
MOUNT

Headset (Steering) Bearings

Standard Stem To adjust the headset bearings, use two spanners, one to hold the top bearing track whilst the second spanner is used to slacken off the top locking nut. Re-adjust the bearing housing then secure by tightening the locking nut until no movement can be felt in the head bearing when the bicycle is pushed forward and backwards with the front brake applied. Check the tightness of the bearing by turning the handlebars from side to side through its full riding range. Re-adjust if required. Finally, lift the front wheel about two inches off the ground and drop it to the floor. If the bearing is too slack, a slight knock will be heard, if so re-adjust.



"A-Head Type" To reset the stem radial position, when re-setting the steering bearings or adjusting the handlebar radial position, first slacken off the one/two bolts on the side of the stem, then the centre bolt on the top of the stem. Re-tighten the centre bolt until no movement can be felt in the head bearing.

Re-tighten the bolts on the side of the stem ensuring that the handlebars are set at 90° to the front wheel. Check the tightness as for the standard stem.



Bottom Bracket Spindle Bearing and Chainwheel

Most bottom bracket bearings are adjustable. Cartridge type bearings are not.

Usually an adjustable bearing has a chrome locking ring on the left-hand side bearing cup. To adjust an adjustable bearing, slacken off the chrome locking ring using a "C" spanner.

Adjust the left-hand cup until all movement is removed, then re-tighten the locking ring.



ADJUSTABLE



CARTRIDGE



The chainwheel and pedal cranks are held in place with either a bolt or nut screwed onto, or into, the spindle. Tighten the nut/bolt using a torque wrench to a torque of 45Nm.



N.B. Having re-fitted or adjusted the retaining bolts, check the torque (tightness) after the first ride to ensure that the assembly has not bedded in, and slackened off the retaining torque. This operation should be repeated monthly.

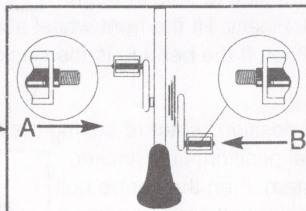
Should a complete overhaul of the bearing assembly be carried out to replace or grease the bearings, note that a special extractor tool will be required to remove the crank and chainwheel. In addition be aware that the right-hand bearing cup has a left-hand thread. This means that to un-fasten the cup it must be turned in a clockwise direction, as opposed to the left-hand cup which has a normal right-hand thread, and unscrews in an anti-clockwise direction.

Pedals

Regular checks on the tightness of the pedal fit into the cranks should be carried out. It will be noted that the **right-hand pedal is marked with a letter "R"** on the spindle end, indicating that it has a right-hand thread and must be screwed in and tightened to a torque of 30Nm in a clockwise direction. The **left-hand pedal is marked with an "L"** and should be tightened in an anti-clockwise direction to the same torque setting.



Turn left-hand pedal anti-clockwise to tighten, looking in direction A.



Turn right-hand pedal clockwise to tighten, looking in direction B.

Wheels

Safe cycling depends a lot on the condition of the bicycle wheels. Tyres should be inspected to check that no damage has been caused to the tread, or side wall, and the tyre pressure should be checked weekly to keep the pressure at the value given on the tyre wall. Should the tyre require inflating, it must be done using either a hand or foot pump to a pressure no greater than that shown on the side wall.



On no account should the tyres be inflated using a garage forecourt pump or compressor.

Valve Types



"SCHRAEDER"
M.T.B. Type

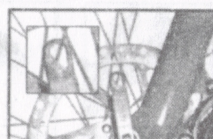
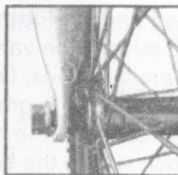
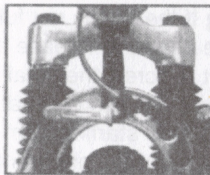


"PRESTA"
Road Type



Front Wheel Removal Disengage the brake cable guide tube from its yoke, to allow the brake blocks to move clear of the rims and tyre. Loosen off the two wheel nuts sufficient to clear the safety nut retainers in the fork-end. Allow the wheel to fall clear of the forks.

If your bicycle is fitted with "Quick Release" wheels, pull the QR lever away from the forks to display the word "Open", slacken off the knurled nut on the opposite end of the quick-release fitting until the wheel falls clear of the forks.



To replace the wheel reverse the above procedure, and with the QR fitting on the left side of the forks when looking to the front, tighten the knurled nut until the lever can only be moved to a position 30° above the horizontal. Check that the wheel is central in the forks. Push the lever upwards to a position in front of, and next to the fork blade, and the word "Closed" is visible. Re-engage the brake guide tube in its yoke and check that the brake functions correctly.



Rear Wheel Removal Rotate the chainwheel and the rear gear so that the chain is on the smallest sprocket. Disengage the brake, as described in front wheel removal, then slacken off the two wheel nuts, and allow the wheel to fall free from the dropout.

To re-fit the wheel, place the chain onto the smallest sprocket, re-locate the wheel in the dropout and tighten the wheel nuts ensuring that the wheel is central to the seat and chainstays. Re-engage the brake guide tube in the yoke checking that the brake operates correctly.



Rear Wheel Replacement

Check that the wheel adjusters, if fitted, will align the wheel correctly as shown when the wheel axle is pushed fully home against them.

Ensure that the quick release mechanism is open. Take up all the tension in the derailleur spring by holding the derailleur fully back.

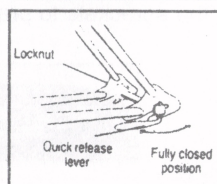
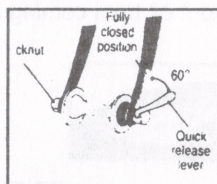
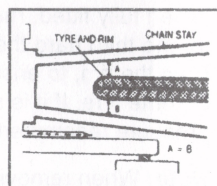
Place the top part of the chain on the small rear sprocket and ease the wheel into the frame.

Make sure that the wheel is centred in the frame, if the rim is equidistant from the chainstays, and the axle is located securely in the chainstay ends (against the wheel adjusters if fitted).

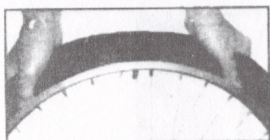
Replace the derailleur protector, if fitted. Close the quick release lever as detailed below, or tighten the axle nuts to the recommended torque, making sure the curved washers are fitted as shown previously on front wheel replacement.

Warning:

Remember to close the brake quick release lever, or reset the cable adjuster



Tyre Removal and Re-Fitting If the tyre is not fully deflated, remove the valve dust cap and push in the valve centre to release any remaining air (schraeder valve). With presta valves, first unscrew the small locking nut, then press centre. Holding the wheel on the ground with the valve at the top, squeeze the tyre into the well in the centre of the rim, and starting from the top, squeeze and push the tyre down each side to the bottom of the rim. In most cases it will now be possible to flick the tyre off the rim by hand without using a tyre lever. Should you be unable to do this, using a tyre lever pushed between the tyre and the rim, lever off the tyre taking care not to trap the inner-tube between the lever and the rim.



REMOVAL

Prior to re-fitting the tyre, or replacing the tyre, it is recommended that you run your hand slowly and carefully around the inside of the tyre to check that there are no objects protruding through the tyre casing.

To re-fit the tyre, insert one side of the rim into the tyre and push that one side onto the rim around its full circumference. Pump two or three times into the deflated inner tube, then insert the valve through the valve hole in the rim ensuring that the rim tape does not prevent the valve from being pushed fully into the valve hole. Push the inner-tube fully into the tyre right around the rim then with the valve positioned at ground level, start pushing the second side of the tyre onto the rim from the top. When the tyre starts to tighten across the rim, return to the starting point at the top, directly opposite to the valve, and repeat the removal operation of squeezing, and at the same time pushing the tyre to the bottom. The effect will be to slacken the tyre at the bottom and in most cases will enable the tyre to be fully fitted without the use of tyre levers. Should this not be possible again use a tyre lever, taking care not to trap the inner-tube between the rim and the lever.

When fully fitted, run both hands around the tyre to centralise it on the rim. Inflate to one third hard then again run your hands around the tyre, squeezing it away from the rim, to ensure that the innertube has not been trapped between the rim and the tyre. If it is not trapped complete its inflation to no greater than the pressure recommended on the tyre wall.

Note: When removing and re-fitting the rear tyre, do so from the side opposite to the sprockets to prevent oil from coming into contact with the tyre or tube.



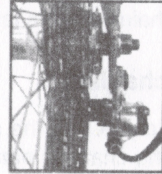
RE-FITTING

Derailleur Gearing System

As the name suggests, the gears fitted operate by "De-Railing" the chain from one chainwheel or sprocket to another. The gears may only be changed when the chainwheel is rotating. Setting up the gears involves making sure that the front and rear gear mechanisms are vertically in line with each of the sprockets or chainwheel when that gear is selected, and that it is not possible for the chain to be moved past either of the outside sprockets or chainwheels. When seated on the bicycle, the rear mechanism is operated by the right-hand lever, a dual control lever, or a twist control, and the front mechanism is operated by the left-hand lever or twist control.



Note: Should your bicycle fall over onto the gear side, check that the rear gear mechanism has not been bent inward before riding. Should this have happened, then it is highly probable that the gear will come into contact with the spokes the next time the largest rear sprocket is selected, resulting in an accident and serious mechanical damage.



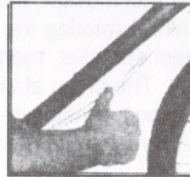
Rear Mechanism

Rotate the chainwheel and at the same time push the right-hand level or twist control fully forward. This should place the chain onto the smallest sprocket. To achieve this with the dual control lever press repeatedly the small lever mounted on the inside face of the lever.



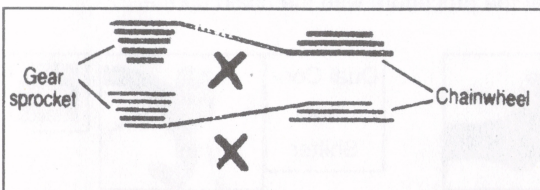
To ensure that the cable is fully bedded into the cable stops, grasp the bare gear cable next to either the top tube or the down tube and strongly pull away from the frame.

Should any slackness develop, slacken the pinch bolt which clamps the gear cable on the gear mechanism and pull through the slack cable. Re-tighten the pinch bolt.



"H" "L"

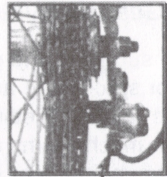
Rotate the chainwheel again and check that the chain runs freely and smoothly on the smallest sprocket. If it does not, observe the gear from the rear to see which way the gear is out of alignment either inward or outward. Should the gear be too far inward, turn the small screw on the gear marked "H", in an anticlockwise direction. If it is too far out turn the screw in a clockwise direction until the gear is aligned. This operation has set the top gear limit. In a similar way, after turning the twist control backwards or pulling the lever fully backwards, set the lower gear stop by adjusting the small screw marked "L".



Warning:

On cycles fitted with more than five gears avoid excessive use of crossover gears where the chain runs from smallest front to smallest rear or largest front to largest rear as this will cause chain and sprocket wear.

To set the precise settings for the individual gears, rotate the chainwheel and change the chain onto the smallest sprocket, then turn the twist control, or move the lever to select the next to smallest sprocket. Continue to turn the chainwheel and at the same time, turn the knurled sleeve into which the gear cable fits on the gear mechanism in a clockwise direction until the chain can be heard to start rubbing on the third sprocket. Turn the sleeve slightly in a clockwise direction until the noise stops. The rear gear mechanism is now set and each gear on the sprocket can be selected by movement of the twist control or the lever. To effect this setting with the dual control lever note that the small inner lever will move the chain onto smaller sprockets whilst pushing the "brake" lever inward will move the chain onto the larger sprockets.



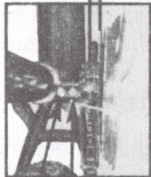
"Knurled Knob"

Front Mechanism

To set, first check that the side plates of the cage, which surrounds the chain, is parallel with the chain wheels. If not, slacken the clamp on the seat tube and move to give the correct position, then re-tighten taking care not to allow the clamp to slide down the tube.

Note: The correct position of the cage is for the outer side of the cage to be 3mm above the largest chainwheel.

PARALLEL



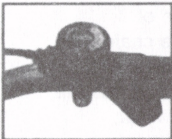
"L" "H"

In a similar manner to the rear mechanism, the top and lower limit stops must first be set. Whilst rotating the chainwheel, move the rear mechanism to select the largest sprocket, then move the front mechanism to select the smallest chainwheel. The chain should be just clear of the inside face of the inner plate of the chain cage. If not, turn the screw marked "L" in the required direction to give the correct chain position. Bed in the cable as described for the rear mechanism.

Note: The dual lever control operates the same as the rear lever, small lever to move onto the small chainwheel and the large lever to move onto the large chainwheel.

Whilst rotating the chainwheel, turn the twist control rearward to move the chain onto the centre chainwheel.

Note: On some models the twist control or lever moves to one of three positions, on others, the control operates on a ratchet. Move the control again to move the chain onto the largest chainwheel. Should the chain be touching the shifting cage, twist the adjuster on the control through which the cable enters the control to move the chain cage clear of the chain. Move the control fully forward to return the chain to the small chainwheel. Repeat the procedure with the chain on the smallest rear sprocket.



Revo Shifter
SIS "Thumb"
Shifter



Dual Control
Shifter



Braking Systems

This section gives advice on the use of brakes, and instructions on their maintenance.

Braking on a bicycle is similar to braking in a car, but in a car the braking system ensures that most braking is carried out by the front brakes. During braking, weight is transferred off the rear and onto the front of the bike or car. If hard braking is carried out equally on both brakes or more on the rear brake, then this transfer of weight will allow the rear wheel to lock up and skid, placing the machine in an out of control condition. On your bicycle, initially both brakes should be applied smoothly and equally, and as harder braking is required the emphasis should be placed on the front wheel braking with attention to the feel of the effect of the rear wheel braking. But at the same time this increase in weight on the front wheel will allow the brake to slow the wheel without skidding.



Like all skills, braking requires practice to enable you to learn the braking capabilities of the brake system.

Bicycle braking systems have improved in leaps and bounds, with the traditional calliper being replaced by the more efficient dual pivot caliper, and even the cantilever brake being superseded in most of the range by the superior "V" type linear brake, and on the top bikes, the ultimate, the disc brakes.



On all bicycles in the UK, the right-hand brake lever operates the front brake and the left-hand lever operates the rear brake.

The braking system requires regular maintenance with a periodic complete strip down. The instructions given cover the re-assembling of the brakes.

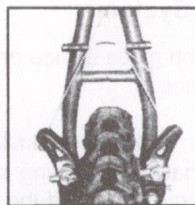
When the brakes have been set correctly and considered correct for riding, the following points should all have been addressed and applied.



- (a) All nuts and bolts are tight to the correct torque setting.
- (b) The brake blocks are not worn too low or damaged.
- (c) The brake cables are free from kinks, are not rusty, are free to move, and are correctly located in the cable stops, levers and brake fitting, and are fitted with a safety end cap.
- (d) The brake blocks and rims are free from dirt and oil, and should be set within 2mm from the rim.
- (e) The brakes should move freely when a gentle pressure is applied to the brake lever.
- (f) The brake block should make full contact with the rim with the top edge being no closer than 1 mm from the tyre, they should be in line with the rim when viewed from the side, and the front end of the block should be 1mm closer to the rim than the rear end. This last setting will eliminate "Squealing" when the brakes are applied.
- (g) When fully applied, the brake levers should not touch the handlebar grip.

Cantilever Brakes

1. Clean and grease the fork and seat stay brake pivots, and install the spring, brake arm, washer and mounting bolt onto each pivot, inserting the protruding spring tail into the middle hole in the brake pivot. Tighten the mounting bolt to a torque to 10Nm.



2. Push one arm towards the rim, and at the same time offer the brake block up to the rim so that it touches the rim 1mm from the top edge. Using a 5mm allen key and a 10mm spanner, tighten (to 10Nm) the brake block in position, clamping the brake block spindle at its mid-point. Repeat with the second brake block.

3. Clamp the straddle wire yoke onto the brake cable, with the bottom of the yoke level with the bottom headset bearing on the front cable, and level with the reflector mounting bracket on the rear cable.

4. Slacken off the adjuster on the brake lever by turning the adjuster two complete turns.

5. Hook the nipple on the straddle wire into the hooked canti-arm, feed the cable through the yoke and into the pinch bolt. Pull the cable through so that the two brake blocks are held against the rim. Tighten the pinch bolt to 10Nm.

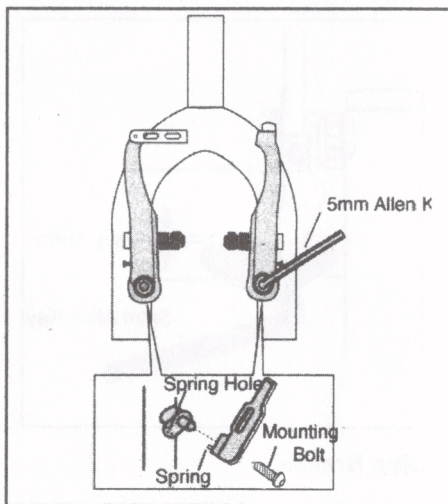
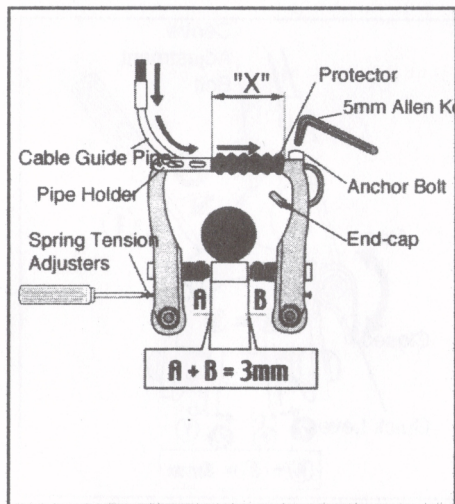
6. Spin the wheel and if the brake block still touches the rim, slacken off the setting using the adjuster on the lever.

7. Trim off the cables 50mm from the pinch bolts then fit a "Safety" end cap onto the cable and pinch it secure with pliers.



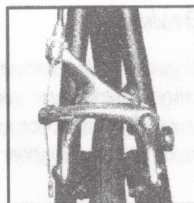
"V" Type Brakes

1. Clean and grease the fork and seat stay brake pivots, and install the spring, brake arm, washer and mounting bolt onto each pivot, inserting the protruding spring tail into the middle hole in the brake pivot. Tighten the mounting bolt to a torque to **10Nm**.
2. Turn the adjusters on the brake levers so that two threads are visible between the lever and adjuster. Insert the cable through the cable guide tube, cable protector and anchor bolt. Tighten the anchor bolt to gently hold the cable in position with dimension "X" set to 60mm.
3. Set the brake blocks to the positions given in (f) above, by sliding the brake block **grooved** spindle through the pinch bolts, or by exchanging the positions of the thin and thick washers on the brake **threaded** spindle, depending on model of brake.
4. If necessary, slacken off the anchor bolt and reset the brake blocks so that **"A" + "B" = 3mm**. Re-tighten the bolt to a torque of **8Nm**.
5. Balance the brake arms so that the brake blocks are equidistant from the rim faces by adjusting the spring tension adjusters.

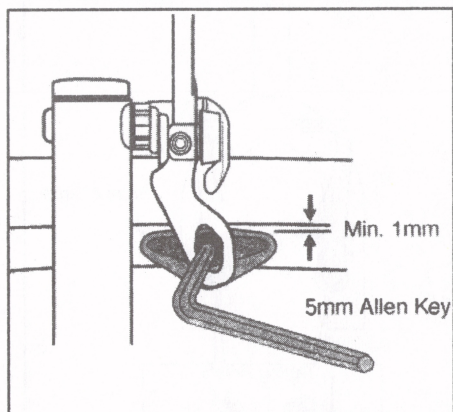


Dual Pivot Calliper

1. Secure the calliper on the forks/frame with the gap between each brake block and the rim equal. Tighten the recessed securing bolt to a torque of 10Nm.
2. Using a 5mm allen key, Adjust the position of the brake blocks so that they make full contact with the rim and that the top edge of the block is 1 mm from the rim edge.
3. Set the adjuster in its mid position, then with the quick release lever in the closed position, pull the cable through the pinch bolt, and using a 10mm spanner, secure the cable in the pinch bolt tightened to 10Nm.
4. Apply the brake lever twice, then spin the wheel to check that the brake allows free rotation.
5. Should both blocks be catching on the rim slacken of the brake using the adjust until there is a total of 3mm gap (see sketch).
6. Should only one block be catching adjust the centre adjusting screw to centralise the blocks. Turn in direction "1" to move in direction "1", and direction "2" to move in direction "2".



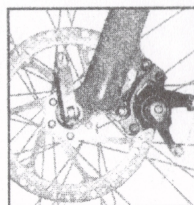
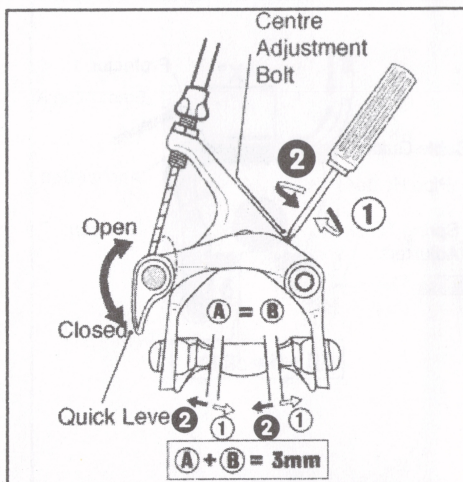
Note: When removing the wheel, the quick release lever should be moved to the "open" position. Care should be taken to ensure that the lever is returned to the closed position following the wheel replacement.



Disc Brakes

Disc brakes are similar to those on cars or motorbikes. The fork or seat stay mounted disc calliper is operated by a cable, causing it to clamp onto the wheel-hub mounted disc. The disc brake can be adjusted at the lever, or for a major adjustment at the pinch-bolt at the disc end of the cable.

Maintenance of this type of brake should be carried out by your dealer.



Warranty Statement

Steel frames and rigid forks are guaranteed to be free from defects in material and workmanship for a period of fifteen years.

Aluminium frames, freestyler BMX frames and forks, suspension frames, suspension forks and all components fitted as standard to the bicycle are similarly guaranteed for one year, except - wear and tear of tyres, inner tubes and braking surfaces are exempt from cover.

During each of these guarantee periods, all original parts and frames which are classified as defective by an authorised Dealer, in either material or workmanship, shall be supplied through an authorised Dealer free of charge.

Transport and labour charges in relation to warranty supplied parts are not subject to the terms of this limited guarantee and shall be the responsibility of the owner.

This limited guarantee applies to the original purchaser, this is not transferable, and applies only to products supplied by the manufacturer and which were not altered in any way from their original specification. The original bill of sale, or original proof of purchase must be presented to the approved Dealer prior to obtaining guarantee service.

This guarantee does not cover failure experienced during activities including, but not limited to rentals, hire or leasing of cycles, competitions of any kind or use for stunt riding including "Wheelies" and jumping.

The above guarantee is in addition to your statutory rights.

Owner Details

Please fill in this part of the manual as soon as possible for security and maintenance reasons.

Model Name:

Frame Number:

(see Page 7)

Purchase Date:

Dealer Name:

Dealer Address:

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Notes

Notes

**AVOCET SPORTS LIMITED
UNIT 7 AND 8,
SHIELD DRIVE
WARDLEY IND. EST.
WORSLEY, MANCHESTER M28 2QB
TEL NO.: 44-161-7278508**